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ABSTRACT

Two English language proficiency tests commonly given by universities and colleges to non-English speaking applicants were administered to 338 students in 5 Toronto high schools. The purpose of the testing was to relate test scores to students' background (language, immigrant status) and to school marks (English marks and others). Both tests appeared to be reasonably reliable in indicating those students who were having difficulty with the English language: Of the 50 students scoring below the common cut-off points, all but 5 did not speak English as a first language and almost all were not born in Canada (most arrived in the last 4 years). The report also discusses the relationship between test scores and school marks as well as the relationship among sub-tests performed well in general, problems did arise with "border-line" cases. The evidence was also not strong enough to recommend one test over the other. (Author)

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TESTING ENGLISH AS A FOREIGN LANGUAGE: MICHIGAN/TOEFL STUDY

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Project Director: E. N. Wright

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TESTING ENGLISH AS A FOREIGN LANGUAGE: MICHIGAN/TOEFL STUDY

BACKGROUND

Many American and Canadian post-secondary institutions require recent non-English-speaking immigrants to write an English language proficiency test before they are admitted to college or university. The Michigan Test and the TOEFL (Test of English as a Foreign Language) are the two tests most commonly used and both claim to assess the English language skills of persons whose native language is not English and who are applicants for admission to American and Canadian English-speaking colleges and universities. Many institutions use these two tests to identify those students who may have difficulty succeeding in an English-speaking post-secondary institution.

A few years ago the heads of Guidance and English at the Toronto Board of Education became concerned when documented evidence indicated that students in grade 13 were being refused admission to university solely on the basis of TOEFL or Michigan test scores. After discussions with representatives from universities and other Toronto Board personnel, it was decided that a large group administration of the TOEFL and Michigan test was desirable. Everyone consulted agreed that the project was valid and the group results might help answer the concern about the suitability of these American-designed tests for the multi-cultural population of Toronto grade 13 students.

In January and February of 1977, 338 grade 13 students from five secondary schools were administered these English language proficiency tests. The Michigan Test was administered at Malvern and Western Tech. Comm. and the TOEFL (Test of English as a Foreign Language) was given to the students at Lawrence Park, Central Commerce, and Eastern Commerce.

Students' marks from the first term (English and other marks) were collected to compare with the scores on the language tests, and information related to students' background such as native language, age on arrival to Canada etc. was also gathered to relate to the test scores.

The tests were administered under the testing conditions specified by the language test manuals and the results of the tests were mailed to each student.

RESULTS

1. Students' Background

Of the 338 students who took the language tests, about half spoke English as their native language or one of their native languages (i.e. they learned English and another language at the same time). Using the immigrant language categories from the 1975 Every Student Survey (Deosaran, Wright and Kane, 1976), the background of the students was as shown in Table 1.

TABLE 1

STUDENTS' IMMIGRANT/LANGUAGE BACKGROUND

Background	Michigan	TOEFL	Total
Born in Canada, English first language	71 (40%)	37 (23%)	108 (32%)
Born in Canada, English not first language*	45 (25%)	44 (28%)	88 (26%)
Not born in Canada, English first language	7 (4%)	6 (4%)	13 (4%)
Not born in Canada, English not first language*	30 (17%)	41 (25%)	71 (21%)
No Information: English first language	8 (4%)	18 (11%)	26 (8%)
No Information: English not first language	17 (10%)	14 (9%)	31 (9%)
TOTAL	178	160	338

* Includes students who learned English and another language at the same time.

About one-third of the students who wrote the tests were born in Canada and spoke English as their first language. About one-quarter of the students were born in Canada but did not speak English as a first language.

Another quarter was not born in Canada, predominantly not English-speaking. Of those students who did not speak English as a native language, the most frequently mentioned native languages were in order: Italian, Chinese, Portuguese, German, Greek, and Polish. Many other languages were also mentioned by a few students.

2. Test Scores

Because the population of students who wrote the tests was predominantly English-speaking, the test scores did not take on the normal distribution that one expects from a population of students who do not speak English as a native language for whom the test was constructed. Both the Michigan and TOEFL distributions were highly skewed to the right of the mean (the Michigan slightly more so), which means that scores clustered above the mean and most of the extreme cases were below the mean. As indicated in Table 2, the mean scores on both tests were quite high and near the upper end of the range of scores. In contrast, the TOEFL manual states that based on over 296,000 foreign students who took the test between 1966 and 1971, the mean total score was 492 (standard deviation = 80).

TABLE 2

MEAN SCORES

Test	Average Score	s.d.	Range
TOEFL	622.9	73.2	346 to 706
Michigan	92.5	7.2	56 to 99

The correlations among the subtests and between each subtest and the total were very high. A more detailed analysis of the correlations and score distributions are given in the Appendix.

About 85 per cent of the students had total scores above the cut-off point that most universitites usually require. A slightly larger percentage of students who wrote the Michigan test were below the cut-off point (see Table 3).

TABLE 3

SCORES BELOW CUT-OFF POINTS

Test	Number of Students	Scores Below 550 (TOEFL)	Scores Below 90 (Michigan)	Percentage Below Cut-off
TOEFL	160	22		13.75
Michigan	178		28	15.70
TOTAL	338	50		14.80

3. Relationship of Test Scores to Background

Of those 50 students who had total scores less than the cut-off points, 5 indicated that English was their native language. However, 3 of those 5 students were not born in Canada and the 2 Canadian-born students had scores on the Michigan test of 89, only one point below the cut-off. Chinese was the native language of 26 of these 50 students, and Italian, the next language most frequently mentioned of students below the cut-off point, was the native tongue of 8 of these 50 students. Only 5 students of the 50 were born in Canada.

Of the students scoring below the cut-off point on the TOEFL, 73 per cent were recent immigrants (i.e. arriving in Canada during the past four years). Of the group below the cut-off point on the Michigan test, 61 per cent were recent immigrants. Table 4 indicates that most of the students scoring below the cut-off points arrived in Canada after

the age of 13. Of the 28 students below the Michigan cut-off point, 7 arrived in Canada before age 7. However, only 2 of these 7 students indicated that English was their native language.

TABLE 4

AGE ON ARRIVAL TO CANADA AND TEST SCORES

	TOEFL		Michigan	
	Total No.	No. Below Cut-Off	Total No.	No. Below Cut-Off
Born in Canada	95	1	117	4
Arrived:				
Age 1-6	13	2	17	3
7-12	26	3	16	4
13 or over	26*	16	28*	17
TOTAL	160	22	178	28

* Chinese-speaking students comprise over 60% of the group of recent immigrants and this accounts for their large representation in the group below the cut-off points.

The results relating immigrant/language background as indicated in Table 1 to test scores revealed a consistently significant trend. For both the Michigan Test and the TOEFL (subtest and total scores), the students who spoke English as their native language (born in Canada or not born in Canada) scored significantly higher than those students not born in Canada who also did not speak English as a native language. This latter group was consistently the lowest scoring one. The differences were very small, however, in the Canadian-born group between those students who spoke English as their native language and those who did not speak English as their first language.

In contrast, when immigrant/language background was related to English marks and the students' average first term marks, no statistically significant trends were found.

4. Relationship of Test Scores to School Marks

The grade 13 English marks and each student's average mark of all his first term credits (whether or not he was taking English) correlated much better with each other than either did with the total scores of the language tests or subtest scores within each test. As indicated in Table 5, English marks correlated better with the language test scores than did a student's average mark.

TABLE 5

TEST SCORES AND SCHOOL MARKS

Correlations	TOEFL Group (n = 160)*	Michigan Group (n = 178)**
English Mark and Average Mark	.747	.806
English Mark and Language Test Score	.556	.418
Average Mark and Language Test Score	.397	.154

* Only 135 students were taking English.
** Only 147 students were taking English.

Both English marks and average marks seemed to correlate better with TOEFL total scores and TOEFL subtest scores than with the Michigan scores and subtests. For the TOEFL, correlations between English marks and subtests are consistently around .5 and correlations between average school marks and subtests are consistently around .3 or .4. The second part of Table 6 indicates the lower correlations between the Michigan subtests and school marks.

TABLE 6

SCHOOL MARKS AND SUBTEST SCORES

Correlations	TOEFL		Michigan	
	English Marks	Average Marks	English Marks	Average Marks
TOEFL:				
Listening Comprehension	.46	.24		
English Structure	.48	.31		
Vocabulary	.54	.38		
Reading Comprhension	.47	.38		
Writing Ability	.54	.44		
TOTAL	.56	.40		
Mighigan:				
Written Test			.37	.16
Aural Test			.38	.11
Composition			.37	.16
TOTAL			.42	.15

The two groups of students who had total language test scores less than the cut-off point seemed to be fairly similar in terms of school marks. About a third of these 50 students were not taking English as a subject, and of those who were taking English, the average English mark was in the upper 40's. As indicated in Table 7, the average English mark of those students above the cut-off point was in the high 60's. The average marks of students below the cut-off point were lower than the average marks of students above the cut-off point but the differences were not as great as between their English marks.

TABLE 7

SCHOOL MARKS OF STUDENTS ABOVE AND BELOW CUT-OFF POINTS

Students' Marks	TOEFL			Michigan		
	≥ 550 (n = 138)	< 550 (n = 22)	Total (n = 160)	≥ 90 (n = 150)	< 90 (n = 28)	Total (n = 178)
Number of students not taking English	18 (13.0%)	7 (32.0%)	25 (15.6%)	20 (13.0%)	11 (39.0%)	31 (17.4%)
Average English Mark	68.0	46.5	65.6	63.7	48.0	61.9
Range:	(40-99)	(15-75)	(15-99)	(12-96)	(29-69)	(12-96)
Mean Average Mark	67.8	55.9	66.1	67.1	61.5	66.2
Range:	(41-93)	(34-74)	(33.8-93)	(18-98)	(40-93)	(17.6-98)

Examining the range of English marks and average marks of the groups above and below the cut-off point (as indicated in Table 7), it becomes apparent that although the means of the groups differ significantly there are cases where students with very high school marks are scoring very poorly on the language tests and vice versa. These exceptions warrant consideration.

The two tests seem to have fairly similar numbers of students in the group below the cut-off point but with good marks. The footnotes to Table 8 provide a description of the immigrant/language background of some of these students.

TABLE 8

STUDENTS BELOW CUT-OFF POINTS WITH GOOD SCHOOL MARKS

Students' Marks	TOEFL	Michigan
Below the cut-off but English mark > 60	4	1
Below cut-off but average > 60	11*	14*
Below cut-off but both English mark and average > 60	3**	1***
TOTAL	18	16

* Most of these students were not taking English.
** Two of these students were Chinese-speaking and one was Portuguese-speaking -- all recent immigrants.
*** This student arrived in Canada at age 1 from Italy.

As revealed in Table 9, a larger number of students who wrote the Michigan test scored above the cut-off point but had poor school marks (both English marks and average marks).

TABLE 9

STUDENTS ABOVE CUT-OFF POINTS WITH POOR SCHOOL MARKS

Students' Marks	TOEFL	Michigan
Above the cut-off but English mark < 50	5	17
Above cut-off but average < 50	7	15
Above cut-off but both English mark and average < 50	3*	8**
TOTAL	15	40

* These students were all born in Canada.
** Six of these students were born in Canada.

SUMMARY

Based on the results of testing 338 grade 13 students, it appears that with few exceptions both English language proficiency tests (TOEFL and Michigan) appear to do what they are supposed to do: to indicate those students who have learned English as a second language and who may have difficulty succeeding in an English post-secondary institution.

Although the results of this study say nothing about the "predictive" validity of the language tests, they do support the test's claim to select students who are currently having difficulty using the English language. Of the 50 students who had language scores below the cut-off points (about 15% of all the students who wrote the tests), only 5 indicated that English was their first language. However, 3 of these 5 students were not born in Canada and the other 2 had scores only 1 point below the cut-off.

The majority of students falling below the cut-off point were recent immigrants. However, scoring below the cut-off point of the Michigan test were 7 students who were either born in Canada or who arrived in Canada before age 6. The TOEFL test only selected 3 students from that category who were below the cut-off, suggesting that it may be slightly more accurate than the Michigan in selecting the appropriate students.

Relating the language scores to school marks revealed that the group scoring below the cut-off point had significantly lower English marks (generally below 50) than the group scoring above the cut-off point. However, over 30 per cent of the group below the cut-off was not taking

English as a subject. The difference between the average first term marks of the groups above and below the cut-off was not as significant as the difference between their English marks. The groups selected by either the Michigan test or the TOEFL as being below the cut-off point were very similar in terms of school marks and language background. However, the school marks in general seemed to correlate better with the TOEFL scores than they did with the Michigan test scores.

In general, the results are satisfactory in terms of what one can expect in a large administration of a standardized test, administered under "testing conditions" and where cut-off points are used. With just a few exceptions, the right students seemed to appear on the "proper" side of the cut-off point. However, when dealing with borderline cases (i.e. a few points around the cut-off) problems did arise. It is probably unlikely that another test could remove these inadequacies.

REFERENCES

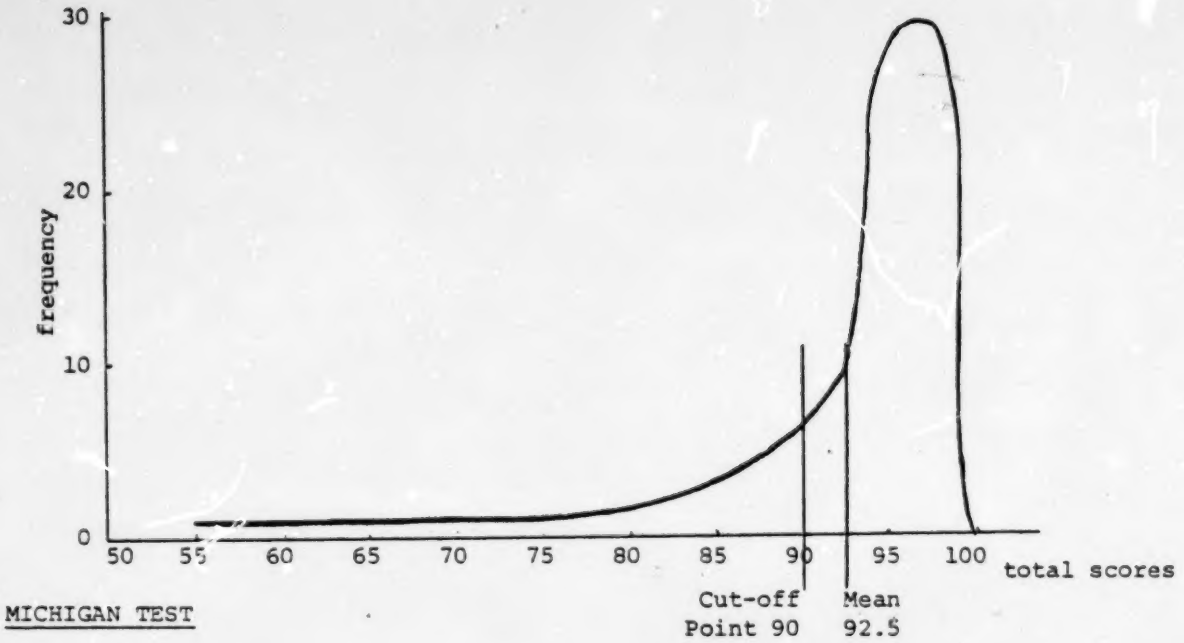
Deosaran, R., Wright, E. N., & Kane, T. The every student survey - Student's background and its relationship to program placement. Toronto: The Board of Education for the City of Toronto, Research Department, 1976 (#138).

APPENDIX

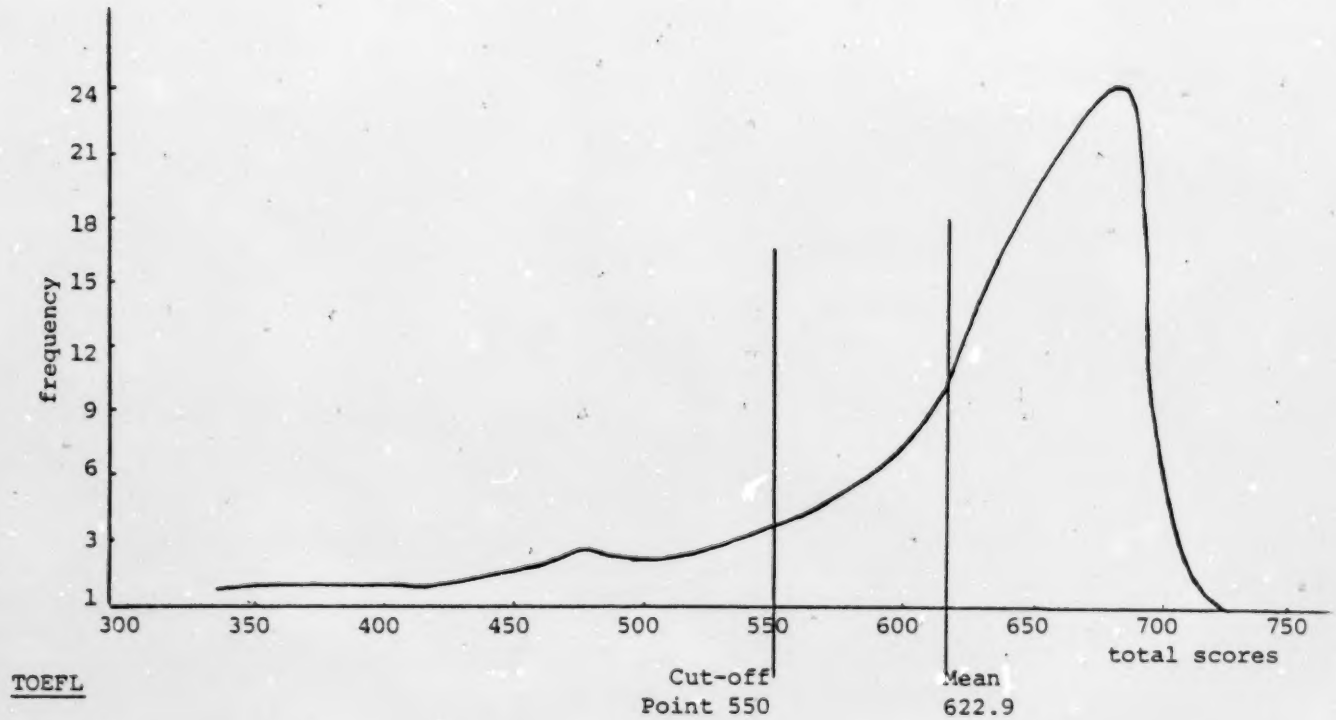
Score Distributions

As mentioned in the main text, because the test population was predominantly English-speaking, the scores on both tests assumed a distribution that was highly skewed to the right of the mean, with the extreme scores occurring to the left of the mean. However, one would expect this type of skewed distribution in a screening test where most students are expected to score well.

On the following page are graphs of the score distributions for both tests. The reader is cautioned not to make direct comparisons between the tests because of the differences in the range of scores and scaling of the graphs.



MICHIGAN TEST



TOEFL

Figure 1. Score Distributions.

Subtest Scores and Intercorrelations

The Michigan Test is composed of three subtests -- Aural Comprehension, a written test (vocabulary, reading comprehension, etc.) and a composition. The scores on each of these subtests took on skewed distributions very similar to the distribution of total scores. The TOEFL has five subtests -- Listening Comprehension, English Structure, Vocabulary, Reading Comprehension, and Writing Ability. As in the Michigan Test, the distribution of scores on these subtests was similar to the distribution of the total TOEFL scores. However, the distribution of scores on the listening comprehension subtest was more skewed to the right han any of the other distributions.

For both tests, the correlations among the subtests were very high. In fact, because of the skewed distribution of scores, the intercorrelations were higher than in most administrations of the test. Enclosed in the appendix are two examples of scattergrams plotting the correlations between (1) the Listening Comprehension subtest and Reading Comprehension subtest of the TOEFL and (2) the Aural Comprehension subtest and the written test of the Michigan Test. The reader may note that from the scattergrams it is quite evident that the students who do well on one subtest usually do well on another. Also, the scattergrams illustrate how the scores cluster in the upper right section of the graphs. Once again, the reader is cautioned not to make direct comparisons between the two graphs because of the difference in range and scale.

Although the intercorrelations among the subtests are very high, when the scores of the groups above and below the cut-off points were examined separately, correlations between the subtests were lower. The following correlation tables (Tables 10 and 11) illustrate this phenomenon.

TABLE 10

INTERCORRELATIONS -- TOEFL

Subtests	Listening Comprehension	English Structure	Vocabulary	Reading Comprehension	Writing Ability	Total
All Students (n = 160)						
Listening Comprehension	1.000	.725	.688	.671	.669	.829
English Structure		1.000	.844	.677	.849	.920
Vocabulary			1.000	.754	.823	.929
Reading Comprehension				1.000	.758	.855
Writing Ability					1.000	.926
TOTAL						1.000
All coefficients are significant at the .001 level.						
Students Above Cut-off Point (n = 138)						
Listening Comprehension	1.000	.313	.406	.505	.375	.614
English Structure		1.000	.614	.429	.663	.769
Vocabulary			1.000	.598	.619	.852
Reading Comprehension				1.000	.588	.796
Writing Ability					1.000	.857
TOTAL						1.000
All coefficients are significant at the .05 level.						
Students Below Cut-off Point (n = 22)						
Listening Comprehension	1.000	.585	.372	.390*	.362	.805
English Structure		1.000	.675	.273	.595	.828
Vocabulary			1.000	.375	.380	.728
Reading Comprehension				1.000	.491	.655
Writing Ability					1.000	.692
TOTAL						1.000

* All coefficients except this one are significant at the .05 level.

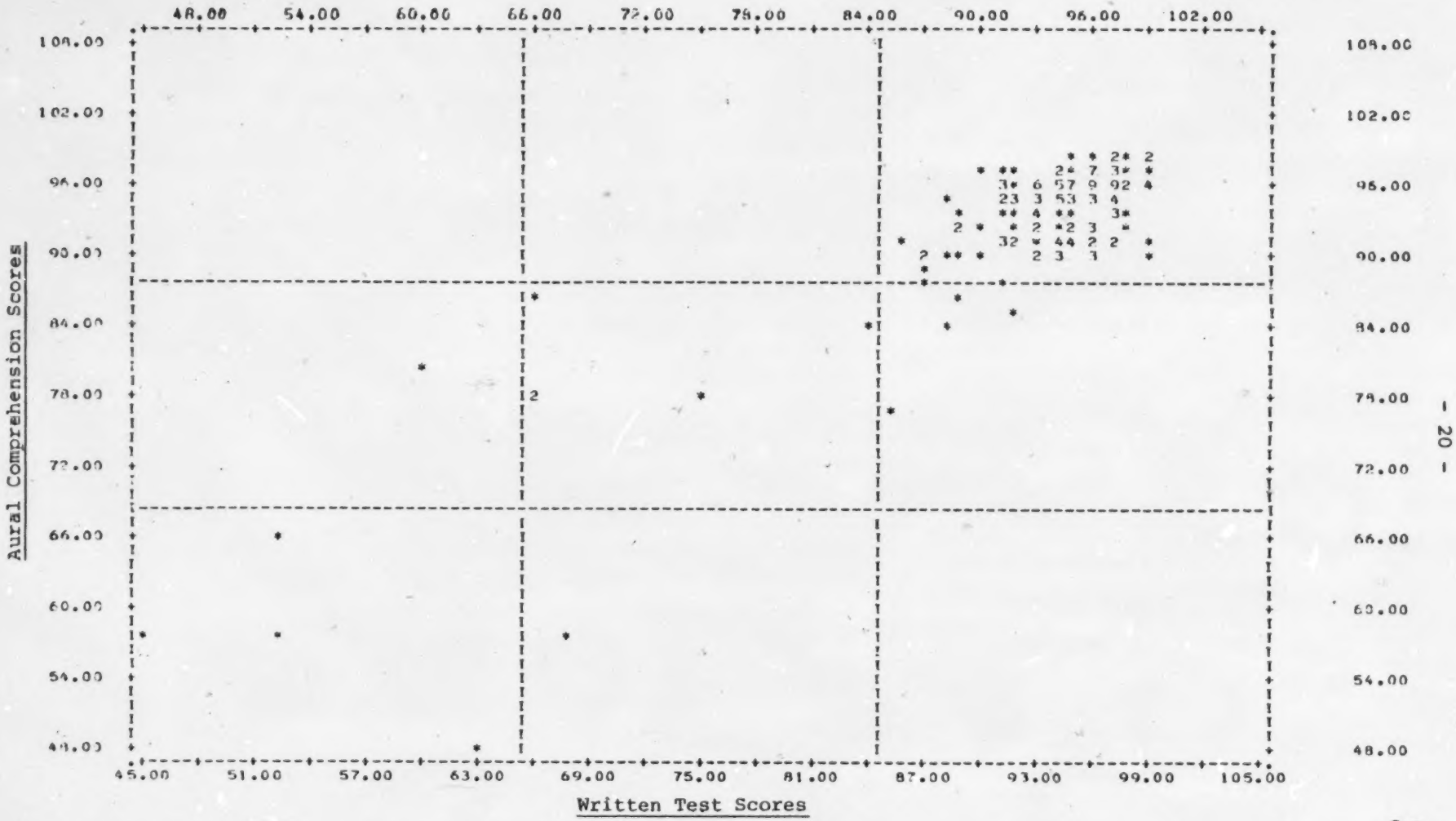
TABLE 11

INTERCORRELATIONS -- MICHIGAN

Subtests	Written Test	Aural Comprehension	Composition	Total
All Students (n = 178)				
Written Test	1.000	.856	.810	.958
Aural Comprehension		1.000	.735	.923
Composition			1.000	.907
TOTAL				1.000
All coefficients are significant at the .001 level.				
Students Above Cut-off Point (n = 150)				
Written Test	1.000	.249	.408	.751
Aural Comprehension		1.000	.153	.636
Composition			1.000	.725
TOTAL				1.000
All coefficients are significant at the .03 level.				
Students Below Cut-off Point (n = 28)				
Written Test	1.000	.818	.649	.948
Aural Comprehension		1.000	.570	.916
Composition			1.000	.784
TOTAL				1.000
All Coefficients are significant at .001 level.				

As discussed in the main text, school marks correlated much better with each other than they did with total language test scores or subtest scores. As indicated in Table 6 of the report, the correlations between school marks and TOEFL scores were higher than the correlation between school marks and Michigan Test scores. The lowest correlation for both tests was between aural comprehension and average school marks. In fact, for the Michigan Test, the correlation was .11, not statistically significant.

MICHIGAN TEST

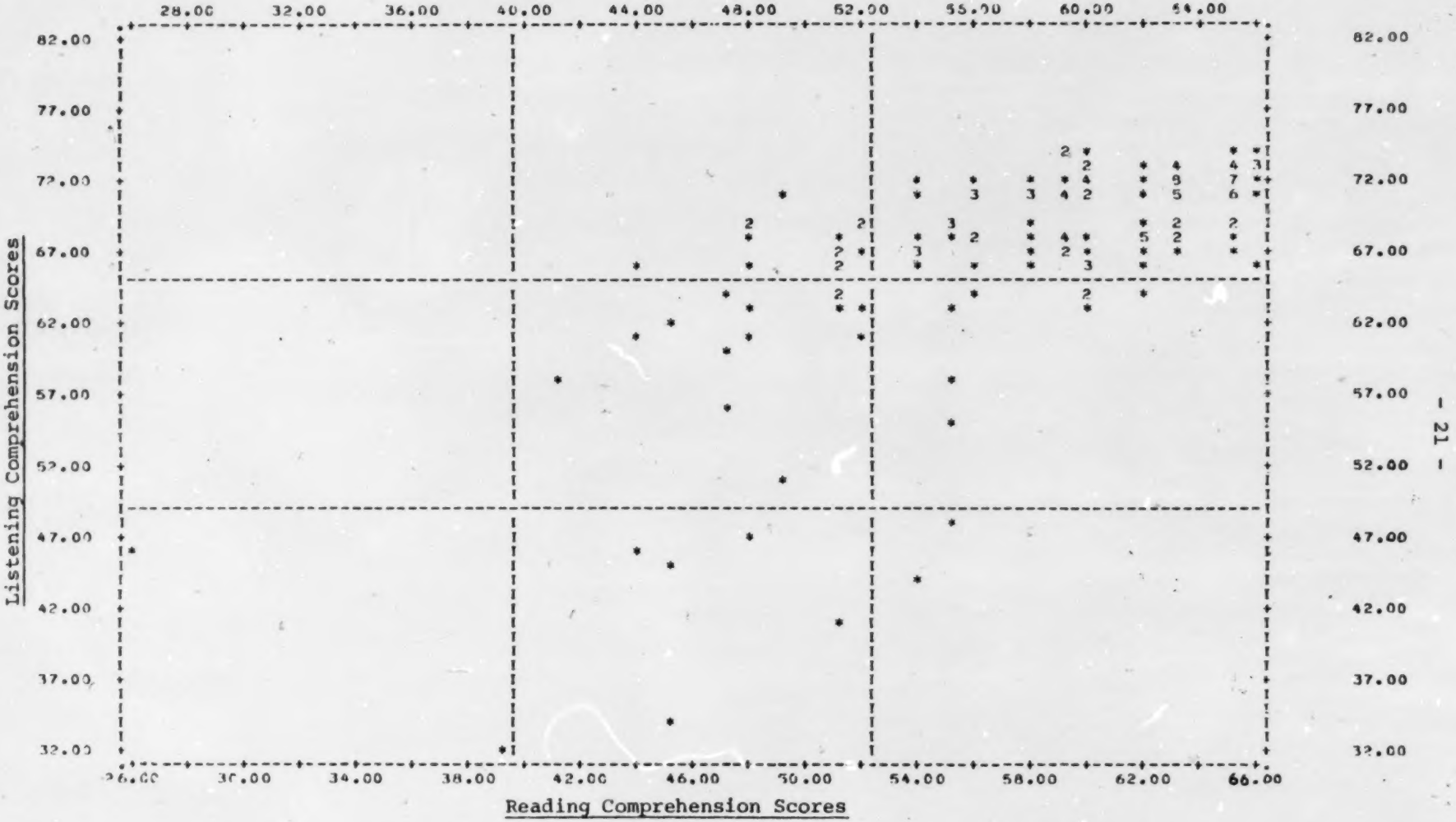


Correlation = 0.85611; Significance = .00001; Plotted Values = 178

NOTE - The numbers instead of stars in the graph indicate that number of stars in the same location.

Figure 2. Scattergram of aural comprehension and written test: Michigan Test.

TOEFL



Correlation = .67101; Significance = .00001; Plotted Values = 160

NOTE - The numbers instead of stars in the graph indicate that number of stars in the same location.

Figure 3. Scattergram of listening comprehension and reading comprehension: TOEFL.